

REMARKS

This Amendment is filed in response to the Office Action mailed May 23, 2007 and in connection with a Request for a 1-month extension of time. All objections and rejections are respectfully traversed.

Claims 1-35 and 41-44 are pending in the case.

Claims 1, 3, 6, 8, 11, 12, 13, 15, 17, 18, 19, 21, 23, 24, 25, 27, and 29 have been amended.

Claims 36-40 have been cancelled without prejudice.

Claims 41-44 have been added.

Claim Rejections – 35 U.S.C. §101

At paragraph 1 of the Office Action, claims 39 and 40 were rejected under 35 U.S.C. §101 as directed to non-statutory subject matter. Claims 39-40 are no longer pending in the case, and accordingly such rejection is believed to be moot.

Claim Rejections – 35 U.S.C. §112

At paragraph 1 of the Office Action, claims 7, 8, 9, 10, and 34 were rejected under 35 U.S.C. §112, first paragraph in relation to the enablement requirement. The Applicant respectfully requests reconsideration of this rejection as there is extended description in the specification of corresponding structure that enables each of these claims. The description of the corresponding structure would make clear to one skilled in the art how to make and use what is claimed.

In relation to claim 7, the Applicant respectfully directs the Examiner's attention to at least specification pages 40-41 which read:

More particularly, each Alternate Path Manager (APM) is responsible for:
determining alternate paths for the outbound link (trunk) it manages.

storing in the Alternate Path database (APD) said alternate paths.
optimally allocating the connections on said alternate paths.
modifying the allocation of the connections on alternate paths
when an update message concerning the utilization or the status of a link
along the alternate path is received from the Topology Database (TDB).
informing the local Transit Connection Manager (TCM) of these
modifications.

triggering, when an alternate path has been found for a connection,
the local Transit Connection Manager (TCM) for setting up said connection
and updating the routing tables along the alternate path (labels reservation).

requesting to the Transit Connection Manager (TCM) the immediate
rerouting of the traffic in case of link failure.

This process is done periodically. The period duration is specified
by means of the "Time-to-Live" parameter (430). When the time period
expires, the Alternate Path Database (APD) is flushed and a new alternate
path is searched for each connection....

In relation to claim 8, the Applicant respectfully directs the Examiner's attention
to at least specification pages 42 which reads:

The Alternate Path Fill-up procedure is intended to collect all the
alternate paths bypassing the links handled by the local Transit Connection
Manager (TCM) with a predetermined number of hops (maximum 2 hops
in a preferred embodiment). One of the specificity of this procedure, is
that, for each outbound link to back-up, when a link has been used in a
alternate path it cannot be used once again for another alternate path to
guarantee the independence of the paths. This approach has been chosen to
make the traffic allocation much more simple since the bandwidth to re-
distribute in case of link failure is equal to the sum of the remaining available
bandwidth provided by the different alternate paths. FIG. 12 shows a
general flow chart of this procedure called either during the initialization
of the Alternate Path Database (APD) or when the Time-to-Live of the database
has expired....

In relation to claim 9, the Applicant respectfully directs the Examiner's attention
to at least specification page 54 which reads:

The Origin Alternate Path Manager (OAPM) (in node A) is now monitoring
the main path. Any failure on the main path triggers the activation of

the alternate path. As this path is already setup in the network, no message needs to be sent to the other nodes of the network. The OAPM merely updates the routing tables to switch from the original path to the new one. As soon as this switch is performed, traffic can flow on the alternate path. The path switching can be very fast since it is only a local action. The OAPM then records the alternate path as the main path and starts to look for a new alternate path

In relation to claim 10, the Applicant respectfully directs the Examiner's attention to at least specification pages 45 which reads:

(1302): If at least one connection in the Connection Table (CT) has not been processed, a test determines whether or not it remains at least one real-time connection to process in the CT. The design choice is to re-route in priority real-time connections in order to minimize the overall impact of the path switching at end user level.

(1308): If all real-time connections in the Connection Table (CT) have been processed, the Alternate Path Manager searches in the CT at least one non real-time connection to process.

If all non real-time connections in the Connection table (CT) have been processed, the procedure returns to step (1310).

If at least one non real-time connection in the CT has not been processed, The procedure goes on with step (1309).

(1309): The first non real-time connection to process is selected and the procedure goes on with step (1304).

(1303): If at least one real-time connection in the Connection Table (CT) has not been processed, the first real-time connection to process is selected and the procedure goes on with step (1304).

As for claim 34, the Office Action alleges that claim 34 is a single means claim. The Applicant respectfully urges that the rejection must contain a typographical error, as claim 34 is a method claim and does not recite any means.

Accordingly, the Applicant respectfully requests reconsideration of all of the rejections under 35 U.S.C. § 112, first paragraph.

Claim Rejections – 35 U.S.C. §102

At paragraph 2-3 of the Office Action, claims 1, 2, 4, 6, 7, 9, 11, 13, 17 and 19 were rejected under 35 U.S.C. §102(e) over Azuma et al., U.S. Patent No. 6,430,150 (hereinafter Azuma).

The Applicant's claim 1, representative in part of the other rejected claims, sets forth:

1. A method for operating a node in a computer network, the node connected to other nodes by links, comprising:
 - determining a path to a destination, the path including one or more links;
 - determining at least one alternate path having at least some of its one or more links differing from the links of the path;
 - reserving resources for said at least one alternate path;*
 - subsequent to reserving resources, detecting a link failure on the path;* and
 - rerouting traffic on said at least one alternate path in case of a link failure.

Azuma discloses a technique for restoring service across a network when a link or node fails. "In the event of a failure in the link or the node, the node adjacent to the location of the failure broadcasts a message to the other nodes in the network to indicate where the failure has occurred. Using the received message, each node performs the computation for finding alternate paths so as to restore the telecommunication path for itself." *See* col. 4, line 67 to col. 4, lines 6 and col. 2 lines 3-21. After a link failure and computation of an alternate path, a "cross-connection phase" is initiated where resources are reserved along the alternate path, and service switched to it. *See* col. 4, line 62 to col. 5, line 8. That is "each node enters the computation phase after receiving the broadcast alarm message. Once the computation result is obtained, each node immediately enters the cross-connection phase." *See* col. 5, lines 37-40.

The Applicant respectfully urges that Azuma does not teach or suggest the Applicant's claimed "*reserving resources for said at least one alternate path*" and "subsequent to reserving resources, detecting a link failure on the path."

Unlike conventional techniques, the Applicant reserves resources for at least one alternate path **prior to** detecting a failure along the primary path. As such, failure recovery may occur in a more rapid manner than with conventional techniques. For example, as the Applicant discusses in the Background of the Specification with a conventional technique “[a] failure on a link adjacent to the an origin or desination node may involve the rerouting of a lot of connections and may need to a high number of simultaneous new path set up. The establishment in parallel of multiple new connections through alternate routes takes time and may disrupt the connections at the end user level.” See page. 12, lines 2-6. The Applicant may avoid this shortcoming.

Azuma, does not teach suggest one should be *reserving resources for said at least one alternate path* before *detecting a link*. Rather, Azuma appears to function similarly to the conventional techniques discussed in the background section of the Application, and would likely suffer the very shortcomings the Applicant has noted. Thus, if anything, Azuma teaches away from what the Applicant claims and would lead one of skill in the art astray from the Applicant’s innovations.

Accordingly, the Applicant respectfully urges that Azuma is legally insufficient to anticipate the present claims under 35 U.S.C. §102 because of the absence of the Applicant’s claimed novel “*reserving resources for said at least one alternate path*” and “subsequent to reserving resources, detecting a link failure on the path.”

Claim Rejections – 35 U.S.C. §103

At paragraph 4-5 of the Office Action, claims 3, 5, 8, 10,12, 18, 14-16, and 20-40 were rejected under 35 U.S.C. §103(a) over Azuma in view of Katzela et al., U.S. Patent No. 5,872,773 (hereinafter Katzela).

The Applicant’s claim 21, representative in part of the other rejected claims, sets forth:

21. A method of non-disruptive packet switching in a network having nodes interconnected with transmission trunks, said method comprising:

pre-selecting at least on alternate path for each trunk;

reserving connections at each node to make said at least one alternate path;

reserving bandwidth resources to transmit packets on said at least one alternate path;

subsequent to the reserving connections and reserving resources, detecting a failure of a particular trunk;

switching the path of a packet from said particular trunk, in response to failure of said particular trunk, to said at least one alternate path; and

re-selecting at least one new alternate path for each trunk in response to user traffic, network resources, and quality of service changes.

Katzela simply discloses a wireless communications network where cells are routed according to virtual path identifiers (VPIs). *See* abstract.

The Applicant respectfully urges that the combination of Azuma and Katzela does not teach or suggest the Applicant's claimed "*reserving connections at each node*" and "*reserving bandwidth resources*" and "*subsequent to the reserving connections and reserving resources, detecting a failure of a particular trunk.*"


As discussed above, the Applicant respectfully urges that Azuma does not reserves resources for at least one alternate path **prior to** detecting a failure on the primary path. Further, Azuma does not reserve connections **prior to** the detecting the failure of the primary path. Katzela in no way remedies the deficiencies of Azuma.

Accordingly, the Applicant respectfully urges that the combination of Azuma and Katzela is legally insufficient to make obvious the present claims under 35 U.S.C. §103 because of the absence of the Applicant's claimed novel "*reserving connections at each node*" and "*reserving bandwidth resources*" and "*subsequent to the reserving connections and reserving resources, detecting a failure of a particular trunk.*"

Should the Examiner believe a p respectfully solicits favorable action.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,


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